

CV15-2500

Controlled volatility silicone

DESCRIPTION

- Two-part, optically clear silicone system
- Low viscosity
- Convenient 1:1 mix ratio (Part A:B)

Meets or exceeds the ASTM E 595 low outgas specifications outlined in NASA SP-R-0022A and European Space Agency PSS-014-702, with a TML of $\leq 1\%$ and CVCM of $\leq 0.1\%$

APPLICATION

- For applications requiring low outgassing and minimal volatile condensables under extreme operating conditions
- As an embedding or potting compound for electronic assemblies and components to provide protection from extremes in humidity, radiation, thermal stress and mechanical stress
- Suitable as an adhesive in applications such as solar cell arrays where clarity and low volatility are important
- For applications requiring a low viscosity for superior flow

PROPERTIES

Typical Properties	Average Result	Standard	NT-TM
Uncured:			
Appearance*	Transparent	ASTM D2090	002
Viscosity, Part A *	3,750 cP (3,750 mPas)	ASTM D1084, D2196	001
Viscosity, Part B*	2,700 cP (2,700 mPas)	ASTM D1084, D2196	001
Work Time*	3 hours	-	008
Tack-Free Time*	6 hours	ASTM C679	005
Cured: 15 minutes at 150°C (302°F)			
Specific Gravity*	1.02	ASTM D792	003
Durometer, Type A*	50	ASTM D2240	006
Tensile Strength*	850 psi (5.9 MPa)	ASTM D412	007
Elongation*	90%	ASTM D412	007
Lap Shear Strength* (primed w/ CF1-135)	225 psi (1.6 MPa)	ASTM D1002	010
Coefficient of Linear Thermal Expansion, above T _g (-80°C to 250°C)	400 ppm/°C (400 $\mu\text{m}/\text{m}/^\circ\text{C}$)	ASTM D3386	-
Extractable Ionics	Below MIL-STD-883E	-	-

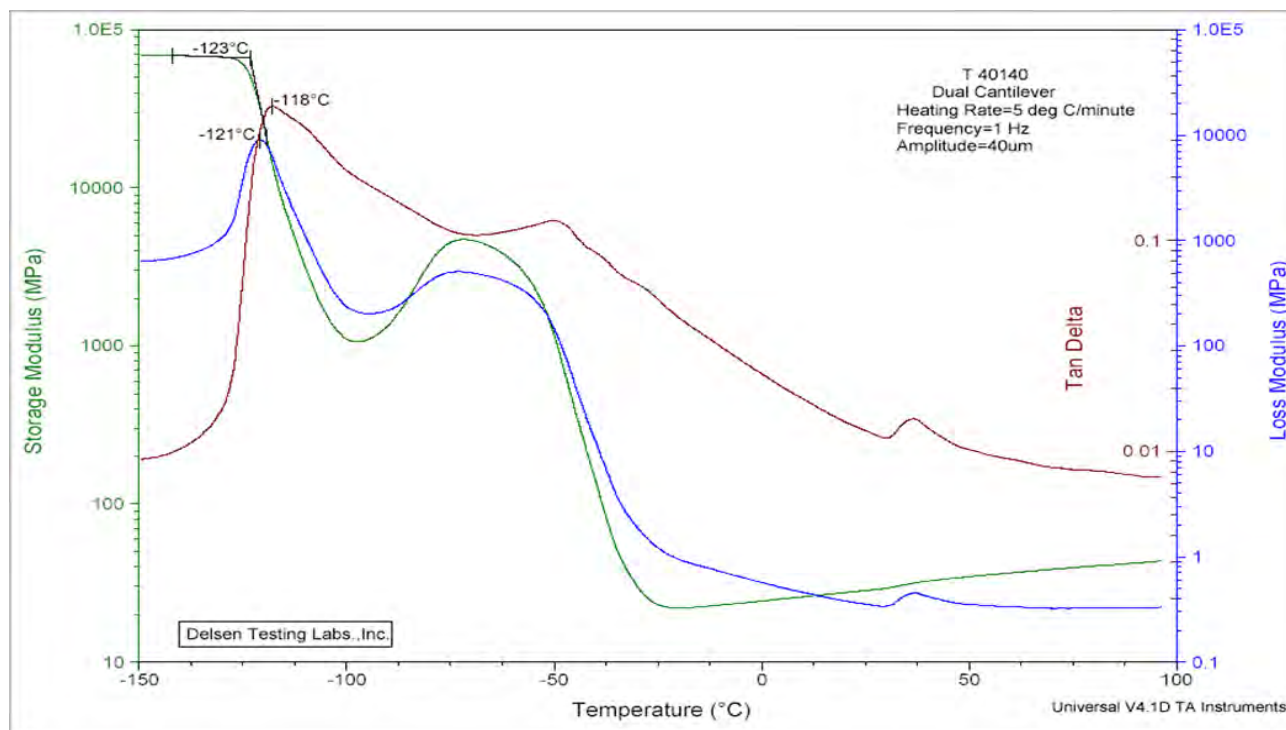
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Typical Properties	Average Result	Standard	NT-TM
Moisture Absorption, % gain after 168 hour exposure at 85°C (185°F) / 85% R.H.	0.11%	-	202
Dynamic Mechanical Analysis (DMA)	See Attached Graph	ASTM E1640	-
Collected Volatile Condensable Material (CVCM)*	0.01%	ASTM E595	072
Total Mass Loss (TML)*	0.05%	ASTM E595	072
After High Temperature Exposure: 7 days at 240°C (464°F)			
Lap Shear Strength (primed w/ SP-270) 10 cycles of 5 minutes at 300°C (572°F)	55 psi (0.39 MPa)	-	-
Tensile Strength	175 psi (1.2 MPa)	ASTM D412	007
Elongation	70%	ASTM D412	007
Young's Modulus	480 psi (3.3 MPa)	-	-
Lap Shear Strength (primed w/ SP-270)	300 psi (2.1 MPa)	ASTM D1002	010

Properties tested on a lot-to-lot basis. Do not use the properties shown in this technical profile as a basis for preparing specifications Please [contact](#) NuSil Technology for assistance and recommendations in establishing particular specifications.

DYNAMIC MECHANICAL ANALYSIS (DMA) ASTM E1640

	Tg	E' at -150°C	E' at 100°C	Max and Min Tan Delta above Tg
CV15-2500	-121°C	16,000 MPa	50 MPa	0.5 – 0.007



INSTRUCTIONS FOR USE

Mixing

Thoroughly mix in a convenient 1:1 mix ratio by weight prior to use.

Vacuum Deaeration

Remove air entrapped during mixing by common vacuum deaeration procedure, observing all applicable safety precautions. Slowly apply full vacuum to a container rated for use and at least four times the volume of the material being deaerated. Hold vacuum until bulk deaeration is complete.

Inhibition Concerns

Cures in contact with most materials. Exceptions include butyl and chlorinated rubbers, some RTV silicones and unreacted residues of some curing agents.

Note: Some bonding applications may require the use of a primer. NuSil Technology CF1-135 silicone primer is recommended.

Adjustable Cure Schedule

Product cures a wide range of elevated temperatures and cure times to accommodate different production needs. [Contact](#) NuSil Technology for details.

OPERATING TEMPERATURE

The operating temperature range of a silicone in any application is dependent on many variables, including but not limited to: temperature, time of exposure, type of atmosphere, exposure of the material's surface to the atmosphere, and mechanical stress. In addition, a material's physical properties will vary at both the high and low end of the operating temperature range. Silicone typically remains flexible at extremely low temperatures and has been known to perform at -50°C (-58°F) as well as resist breakdown at elevated temperatures up to 250°C (482°F). The user is responsible to verify performance of a material in a specific application.

ROHS AND REACH COMPLIANCE

Please [contact](#) NuSil Technology's Regulatory Compliance department with any questions or for further assistance

SPECIFICATIONS

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Packaging

50 mL SxS Kit
50 Gram Kit
100 Gram Kit
500 Gram Kit

Warranty

12 Months

Technology for assistance and recommendations in establishing particular specifications.

WARRANTY INFORMATION

The warranty period provided by NuSil Technology LLC (hereinafter "NuSil Technology") is 12 months from the date of shipment when stored below 40°C in original unopened containers. Unless NuSil Technology provides a specific written warranty of fitness for a particular use, NuSil Technology's sole warranty is that the product will meet NuSil Technology's then current specification. NuSil Technology specifically disclaims all other expressed or implied warranties, including, but not limited to, warranties of merchantability and fitness for use. The exclusive remedy and NuSil Technology's sole liability for breach of warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. NuSil Technology expressly disclaims any liability for incidental or consequential damages.

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NuSil Technology has tested this material only to determine if the product meets the applicable specifications. (Please [contact](#) NuSil Technology for assistance and recommendations when establishing specifications.) When considering the use of NuSil Technology products in a particular application, review the

latest Material Safety Data Sheet and [contact](#) NuSil Technology with any questions about product safety information.

Do not use any chemical in a food, drug, cosmetic, or medical application or process until having determined the safety and legality of the use. The user is responsible to meet the requirements of the U.S. Food and Drug Administration (FDA) and any other regulatory agencies. Before handling any other materials mentioned in the text, the user is advised to obtain available product safety information and take the necessary steps to ensure safety of use.

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